the text appearing in brackets be deleted and that the underlined text be inserted.

CLEAN VERSION OF ALL PENDING CLAIMS NUMBERED 1-34

1. A method of conditioning a grinding wheel in which a groove has been formed, comprising the steps of engaging the unconditioned groove with part of the periphery of a wafer workpiece, rotating the wafer through a small angle so as to perform a shallow grind over a small arcuate extent of the rim of the wafer, dis-engaging the wheel from the wafer and axially shifting the wheel or the wafer before re-engaging and performing a similar grind over another arcuate region of the wafer and performing a sequence of such steps around part or all of the circumference of the wafer thereby to removing bonding material from the surface of the groove in the grinding wheel and expose the grinding grit, and thereby condition the wheel.

2. A method according to claim 1 in which the depth to which each of the arcuate grinds is performed is limited so as not to encroach into the useful material from which the wafer is constructed, so that a final grinding process performed on the wafer so as to remove the remainder of the extraneous material from the periphery of the wafer will still leave a full size wafer with a correctly formed profile around its periphery.

3. A method according to claim 1 for forming and re-forming grinding wheels, particularly metal bonded grinding wheels, which is performed in situ.

4. An edge grinding machine in which a workpiece is rotated relative to a rotating grinding wheel having a groove formed in its surface for grinding the periphery of the workpiece to size and shape, in which a spark erosion electrode is mounted for rotation with the workpiece, and the wheel to be formed and reformed is axially shifted and advanced, so that the region thereof which is to be formed with a groove or containing a groove which is to be re-formed can

be engaged by the spark erosion electrode as the latter rotates about the workpiece axis, and forming and re-forming of the groove in the grinding wheel is performed by rotating the grinding wheel at high speed whilst simultaneously rotating the electrode around the workpiece axis so that spark erosion is performed around the whole of the circumference of the groove.

5. A method of forming the external peripheral surface of a forming wheel carried by a work spindle, in which the forming wheel is used to form and re-form grooves in grinding wheels for grinding the edge profile and the notch profile of a wafer mounted for rotation about the same axis as the forming wheel, and in which a stationary grooved electrode is mounted to the machine and is adapted to be moved into close proximity to the edge of the forming wheel mounted on the workpiece spindle so that part of the arcuate extent of the said circumference is embraced by a groove within the electrode, and electro-discharge machining is performed as the forming wheel is rotated so as to form the desired profile around the periphery of the forming wheel to enable it to continue to perform its forming and re-forming task.

6. A method according to claim 5 in which the electro-discharge machining comprises spark erosion.

7. A method according to claim 5 when used for grinding wheels.

8. A machine having fitted thereon an arcuate electrode adapted to be moved towards and away from the edge of a forming wheel, the forming wheel being mounted on a work spindle to the rear of a workpiece mounting device such as a vacuum chuck, and means for advancing the electrode so that a groove therein embraces the edge of the forming wheel to allow electro-discharges machining to be performed on the external circumference of the forming wheel.

9. A machine according to claim 8 in which the forming wheel is a metal bonded

grinding wheel used as an electrode in an electro-discharge machining process for forming and re-forming grooves in edge grinding wheel and notch grinding wheels mounted on the same edge grinding machine.

10. A machine according to claim 8 in which both the wheel and electrode are rotated.

11. A machine according to claim 8 in which the electrode is located to the rear of a vacuum chuck on which is normally mounted a disc-like workpiece whose periphery is to be ground.

12. A machine according to claim 8 in which a separate disc electrode is employed which is also adapted to be mounted on the workpiece mounting device attached to the workpiece spindle for rotation thereby in place of a workpiece.

13. A method of operating a machine according to claim 11 in which the profile of the ground periphery of the workpiece is measured using an optical inspection system enabling the profile, to be checked by eye, to be checked against a profile or to be optically projected onto a photoelectric device such as a CCD camera of the like, whereby a video signal can be produced for processing and/or display on a visual display unit.

14. A method according to claim 13 in which video signals are obtained, are stored, processed, and compared with template signals, subjected to an algorithm to determine the shape of the device which produces the signals, and otherwise measured and investigated to determine the correctness or otherwise of the ground profile.

15. A method according to claim 13 in which signals are displayed on a visual display unit, the enlarged display of the profile being checked by eye and/or checked against an optical profile device offered up to the screen of the visual display unit for comparison.

16. A method of positioning a grooved grinding wheel relative to a disc-like circular workpiece for edge grinding the latter using the groove in the wheel to produce two converging frustoconical surfaces around the rim of the workpiece, comprising the steps of: mounting the workpiece for rotation about a first axis, mounting the grooved grinding wheel for rotation about a second parallel axis, effecting relative movement between the workpiece and the wheel to engage the rim of the wheel within the groove, performing a preliminary grind, separating the wheel from the wafer, measuring the peripheral rim of the wafer to determine the accuracy of its form relative to a template or to stored data relating to the desired form, axially adjusting the position of the wheel and therefore the groove in response to the measurements made in the profile of the rim produced by the preliminary grind, re-grinding the rim with a second preliminary grind with the grinding wheel located at the axially shifted position, measuring the profile of the ground rim of the workpiece as before, adjusting the axial position of the grinding wheel again, re-grinding the ground periphery of the workpiece and repeating the measuring and axial shifting steps until the rim profile possesses the desired accuracy, and utilising the final position of the grooved grinding wheel for grinding future wafers.

17. A method according to claim 16 in which the sequence of preliminary grinds are formed one after the other around the rim of the circular workpiece, with a small axial shift of the grinding wheel between each preliminary grind, each said preliminary grind being performed over only a small arcuate extent of the overall circumference of the rim, the rotational position of each said preliminary grind and the corresponding axial position of the grooved grinding wheel being noted and stored for future reference, and the profile obtained by each of the succession of preliminary grinds is measured, and the axial position for future grinds is determined by reference to the result obtained from each of the different preliminary grinds by selecting the

axial position for the wheel which gave the best profile.

18. A method according to claim 16 in which the preliminary grinds are measured whilst the workpiece is still mounted in the grinding station, or in which the workpiece is de-mounted and taken to an inspection location for the preliminary grinds around its periphery to be measured.

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19. A method according to claim 16 in which the preliminary grinds do not encroach into the final size of the wafer so that after the succession of preliminary grinds has been completed and the correct position for the grooved grinding wheel has been selected, a final grinding step performed on the wafer will allow the latter to be ground to size with the peripheral profile correctly located relative to the two parallel faces of the wafer.

20. A method according to claim 16 for use in positioning grinding wheels which cannot be formed and re-formed in situ, particularly metal bonded wheels.

21. A method according to claim 2 for forming and re-forming grinding wheels, particularly metal bonded grinding wheels, which is performed in situ.

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22. A method according to claim 6 when used for grinding wheels.

23. A machine according to claim 9 in which both the wheel and electrode are rotated.

24. A machine according to claim 9 in which the electrode is located to the rear of a vacuum chuck on which is normally mounted a disc-like workpiece whose periphery is to be ground.

25. A machine according to claim 10 in which the electrode is located to the rear of a vacuum chuck on which is normally mounted a disc-like workpiece whose periphery is to be ground.

26. A machine according to claim 9 in which a separate disc electrode is employed which is also adapted to be mounted on the workpiece mounting device attached to the workpiece spindle for rotation thereby in place of a workpiece.

27. A machine according to claim 10 in which a separate disc electrode is employed which is also adapted to be mounted on the workpiece mounting device attached to the workpiece spindle for rotation thereby in place of a workpiece.

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28. A method of operating a machine according to claim 12 in which the profile of the ground periphery of the workpiece is measured using an optical inspection system enabling the profile, to be checked by eye, to be checked against a profile or to be optically projected onto a photoelectric device such as a CCD camera of the like, whereby a video signal can be produced for processing and/or display on a visual display unit.

29. A method according to claim 17 in which the preliminary grinds are measured whilst the workpiece is still mounted in the grinding station, or in which the workpiece is de-mounted and taken to an inspection location for the preliminary grinds around its periphery to be measured.

30. A method according to claim 17 in which the preliminary grinds do not encroach into the final size of the wafer so that after the succession of preliminary grinds has been completed and the correct position for the grooved grinding wheel has been selected, a final grinding step performed on the wafer will allow the latter to be ground to size with the peripheral profile correctly located relative to the two parallel faces of the wafer.

31. A method according to claim 18 in which the preliminary grinds do not encroach into the final size of the wafer so that after the succession of preliminary grinds has been completed and the correct position for the grooved grinding wheel has been selected, a final